



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/713,479 | 11/15/2000 | William Romine | QSOF0.050A | 3574 |
| 20995 | 7590 | 03/09/2004 | EXAMINER | |
| KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614 | | | LE, DEBBIE M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2177 | 12 |

DATE MAILED: 03/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/713,479

Applicant(s)

ROMINE ET AL.

Examiner

DEBBIE M LE

Art Unit

2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 15, 19, 30-41 and 49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 15, 19, 30-41 and 49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>11</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/12/2003 has been entered.

Priority

Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 12/12/03 is in compliance with the provisions of 37 CFR 1.97 and has been considered by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 22-23, 35-36, 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Friske et al (US Patent 6,519,613 B1).

As per claims 22, 35 and 40, Friske teaches reorganizing an original object (*data set subject to reorganization*) by copying (*unloaded*) from the original object (fig. 3, # 302, *from the logical database 302*) to a reorganized object (fig. 3, # 310, *shadow location*) (col. 6, lines 5-11, 25-33);

the trigger lock blocking data modification operations from modifying the reorganized object, while allowing other operations to access the reorganized object (abstract, lines 11-13 that "*The non-blocking drain does not prevent other requests on*

the database from being processed while the reorganization lock is in place", fig. 4 # 404).

As per claim 23, the method of claim 22, Friske teaches wherein the other operations include one or more read-only operations (col. 6, lines 60-67).

As per claim 36, the method of claim 35, Friske teaches wherein the other operations include one or more read-only operations (col. 6, lines 60-67).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-11, 19-21, 24-25, 30, 32, 34, 37-38, 41 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friske et al. (US Patent 6,519,613 B1) in view of Pereira (US Patent 6,122,640).

As per claims 1, 19, 30, and 32, Friske discloses a system for reorganizing a database while allowing substantially uninterrupted access to the database comprising:

reorganizing data (*data set subject to reorganization*) of an original table (fig. 3, # 302, *from the logical database 302*) by copying (*unloaded*) the data to a reorganized table (fig. 3, # 310, *shadow location*) (col. 6, lines 5-11, 25-33);

during the copying, allowing modifications to the data of the original table while collecting records of the modifications (*substantially continuous access to the database while the reorganization process is executing*, col. 1, lines 31-32, col. 3, lines 29-30);

when the copying completes, applying the modifications from the collected records (fig. 3, # 312, log records) against the reorganized table (shadow location) (col. 6, lines 33-36);

the first trigger lock blocking select data modification operations against the original table while allowing other operations against the original table (col. 6, lines 56-67);

applying any remaining modifications from the collected records against the reorganized table (col. 6, lines 37-39);

applying a second trigger lock to the reorganized table (= ***while the reorganization lock is in place***, abstract, lines 12-13), the second trigger lock blocking select data modification operations against the reorganized table while allowing other

operations against the reorganized table during the reorganization (abstract, lines 11-13 that *"The non-blocking drain does not prevent other requests on the database from being processed while the reorganization lock is in place"*, fig. 4 # 404);

substituting the reorganized table for the original table (fig. 4, # 422, col. 6, lines 42-43, col. 9, lines 13-15); and

removing the second trigger lock, wherein additional more-restrictive locks to the original table are not needed during the method of reorganizing the original table, thereby providing clients of the original table continuous access to the data during the reorganization through at least the other operations allowed by the first trigger lock (fig. 4, # 426, col. 9, lines 16-19).

Friske teaches blocking-drain (a lock on a resource, col. 1, lines 35-36). But, Friske wants to overcome the blocking-drain so that his invention provides a non-blocking drain (*substantially continuous access to the database while the reorganization process is executing*). Friske discloses apply a trigger lock (non-blocking drain) to a target data set. Friske does not explicitly teach a applying a first trigger lock to the original table. However, Pereira teaches applying a first trigger lock to the original table (col. 7, lines 60-67). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to provide a lock to a original table because it prevents a greater degrees of disorganization may occur to the reorganization table.

As per claims 2, 21 and 34 Pereira teaches wherein the other operations allowed by at least one of the first and second trigger locks comprises one or more structural modification operations (col. 8, lines 36-49).

As per claims 3, 20 and 33 the method of claim 1, Friske teaches wherein the other operations allowed by at least one of the first and second trigger locks comprises one or more read-only operations (col. 6, lines 60-67).

As per claim 4, the method of claim 1, Friske teaches during the application of the modifications from the collected records (fig. 3, # 312) against (a arrow) the reorganized table (fig. 3 # 310), allowing additional modifications to the data of the original table while collecting additional records of the additional modifications (*reflecting changes which occurred to the original data set after the target data set was unloaded*, col. 6, lines 33-35); and when the modifications and at least portions of the additional modifications have been applied against the reorganized table, applying the first trigger lock to the original table (col. 2, lines 33-45); wherein the step of applying any remaining modifications includes applying any remaining modifications or additional modifications against the reorganized table (col. 6, lines 36-39).

As per claim 5, the method of claim 1, Pereira teaches wherein when the original table included one or more relational constraints, the method further comprises applying at least one of the one or more relational constraints to the reorganized table (col. 6, lines 1-6).

As per claims 6-7, the method of claim 5, Pereira teaches wherein the application of the at least one relational constraint to the reorganized table includes applying a

trigger procedure to the reorganized table, wherein the application of the at least one relational constraint to the reorganized table includes applying a trigger lock to another table (DBMS, col. 9, lines 13-22).

As per claim 8, the method of claim 1, Pereira teaches wherein the original table includes a table name, and wherein the step of substituting the reorganized table for the original table further comprises renaming the original table another name and naming the reorganized table the table name (col. 2, lines 22-26).

As per claim 9, the method of claim 1, Pereira teaches archiving the original table (col. 12, lines 63-65).

As per claim 10, the method of claim 1, Pereira teaches wherein the copying of the data of the original table to the reorganized table further comprises creating an original synchronization point, after which the records of modifications are collected (col. 8, lines 25-39).

As per claim 11, the method of claim 1, Pereira teaches wherein before the application of the second trigger lock, the original table and the reorganized table are in synchronization with one another (col. 2, lines 23-24).

As per claims 24 and 25, the method of claim 22, Friske does not explicitly wherein the other operations include one or more structural modification operations, wherein the one or more structural modification operations include consecutive data definition language operations. However, Pereira teaches a lock a source table (col. 7, lines 60-67) so that allows modification to the structure of the source being operated. Thus, it would have been obvious to one of ordinary skill in the art at the time the

Art Unit: 2177

invention was made to combine the teachings of the cited references to provide a lock to a structure modification operations because it improves speed of the reorganization process to recreate the database.

As per claims 37-38, the method of claim 35, Friske does not explicitly wherein the other operations include one or more structural modification operations, wherein the one or more structural modification operations include consecutive data definition language operations. However, Pereira teaches a lock a source table (col. 7, lines 60-67) so that allows modification to the structure of the source being operated. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to provide a lock to a structure modification operations because it improves speed of the reorganization process to recreate the database.

As per claim 41, the method of claim 40, Friske does not explicitly teach wherein the read only access to the data includes read-only access during multiple data definition language operations. However, Pereira teaches a lock a source table (col. 7, lines 60-67) so that allows modification to the structure of the source being operated. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to provide a lock to a structure (DDL) modification operations because it improves speed of the reorganization process to recreate the database.

As per claim 49, the method of claim 30, Friske teaches wherein the reorganization application is further configured to apply a trigger lock to the reorganized

table, thereby blocking select data modification language operations while allowing one of one or more read-only operations and one or more data definition language operations (abstract, lines 11-13 that "*The non-blocking drain does not prevent other requests on the database from being processed while the reorganization lock is in place*", fig. 4 # 404).

Conclusion

If a reference indicated as being mailed on PTO-FORM 892 has not been enclosed in this action, please contact Lisa Craney whose phone number is (703) 305-9601 for faster service.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEBBIE M LE whose telephone number is 703-308-6409. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN BREENE can be reached on 703-305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DEBBIE M LE
Examiner
Art Unit 2177

Debbie Le

March 4, 2004.



GRETA ROBINSON
PRIMARY EXAMINER